

Let's Get Michigan Working Again

A Practicing Immunologist's Perspective on Coronavirus (Sars-CoV-2, COVID-19)

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Introduction

Coronaviruses have been known in the United States since their discovery over 50 years ago. Certain strains of these viruses infect humans, while some tend to infect animals. These viruses rarely cause death in humans; they are often cited as the cause of common colds. COVID-19 is for the most part acting in the same way but with a notable exception – it can be deadly in elderly and in those with significant underlying health conditions (cancer, lung disease, immune deficiency disorders). In Michigan, 95% of people who have died of Coronavirus are over the age of 60. Nonetheless, even in Italy, where the virus has killed thousands, most of those over the age of 90 recovered (78.3% of those over 90 recovered). Overall in the United States, over 98% of those who get the virus will recover. This is different from influenza epidemics in 1918 or 2010; those epidemics involved all ages. This ability for younger individuals to be safe from serious illness has important implications. UV light can be a significant treatment for the virus as UV light damages viral DNA and RNA and therefore kill it.

Effective ways to combat the disease from a practical standpoint include the use of medications (preliminary reports have shown significant benefit with the use of azithromycin and hydroxychloroquine), herd immunity, and shielding those at high risk until herd immunity sets in. Vaccines are not available and cannot be counted on to address this issue for possibly the next year to year and a half.

Testing

Testing of high risk people (those who most likely would get COVID-19 due to exposure to confirmed COVID-19 patients or travel from high risk areas) for *active* infection has revealed that the vast majority of patients are testing negative, i.e., they have no evidence of disease. The Munson Healthcare System (serving the northwest Lower Peninsula) reported today that 88% of all those who've been tested in the past 2 months have tested negative for Coronavirus.

Furthermore, antibody testing, which looks for evidence of *past* infection, has shown that 50-85 times the number of people have had the disease compared to the number actually carrying the virus (Stanford University research of Santa Clara County, California, last week). This shows that many people never even got sick from Coronavirus even though they had it. Why is that? Most likely, these patients have pre-existing immunity to the virus *from previous exposure to COVID-19* or due to cross-reactive immunity from being infected by related Coronaviruses. Another possibility is that the virus is just not a big deal in healthy people with no underlying medical conditions. Some people have stated that they suffered symptoms of Coronavirus earlier this year. Due to a lack of testing, many of these people may have had exposure to the virus; they have developed immunity to it.

This is why the concept of herd immunity is so important. With herd immunity, significant amounts of the population will have exposure to the virus and become immune to it. They are no longer able to spread the virus as their immune systems kill the virus before it has a chance to grow and

multiply. That individual then becomes not a source of viral spread but a source of killing the virus. The virus has nowhere to go and it disappears. That is why we are seeing the decrease in new cases in Michigan. Herd immunity is setting in.

Getting Facts from Statistics

There is mass confusion with regard to the statistics and the media has utilized this to bring fear and panic to the population. Statistics on who has been exposed, who has it, who is seriously ill with it and what are projected numbers of deaths have been incredibly wrong. The death rates of COVID-19 have been incredibly off since prediction models first started listing possible numbers of deaths early this year. In January, the Institute for Health Metrics and Evaluation (IHME), the main consulting organization that has been advising the Coronavirus Task Force on predictions of the virus, estimated over 2 million people could perish from the virus. By the end of March, this number had come down to 95,000 and less than a week later the estimate was lowered to 61,000. As a comparison, the following information is noted:

Average US Deaths yearly from the following (*Source: CDC*)

Heart disease deaths per year:	647,000
Cancer deaths per year:	558,644
Drug overdose deaths in the United States per year:	70,000
Estimated possible influenza deaths after the end of this flu season:	62,000
Estimated yearly deaths from pneumonia:	49,000
Estimated yearly vehicle accident deaths	32,850

Fortunately, the death toll in Michigan, like the rest of the United States, has been significantly less than some have anticipated. Just today, the Beaumont Hospital System announced the discharge of over 200 patients with Coronavirus infection. Over 300 less patients are hospitalized with the infection compared to the peak of infections at 1107 earlier this month. Extra hospital beds and ventilators were made available and not needed in Michigan, thankfully.

As of April 20, new cases in the state of Michigan are at their lowest point since March 16, one week before the governor instituted her lockdown order. In other parts of the state, significant levels of Coronavirus were never detected. For example, in the city of Cadillac, so far only 15 patients have tested positive and 2 have died. In Sault Ste. Marie, only 2 confirmed cases have been reported. 23 counties have no COVID-19 deaths based on statistics from the Michigan Department of Health and Human Services. Then why has the entire state of Michigan been handcuffed with a lockdown?

End the Lockdown

The current lockdown is not a quarantine. Michigan residents have gone shopping to their grocery stores (including big box stores such as Meijer and Walmart) as well as Home Depot, Walgreens, drive-thrus, and carry out restaurants. Despite these activities, most of the state did not see a flood of Coronavirus cases that were predicted by various health experts and media pundits. This experience has shown that the state can reopen. If a Meijer Superstore can remain open and not cause a flood of Coronavirus infection, then a construction business or office in Novi should be able to get back to work. A boutique in Traverse City doesn't have anywhere near the foot traffic of a Walmart; it can open its doors without fear or panic. Is a sit-down restaurant in Frankenmuth any more likely to spread the virus

than a Taco Bell with a block-long line of cars being served by a group of employees in a closed space such as a fast food kitchen – for hours every day?

The current lockdown in Michigan has had significant consequences on a variety of fronts. Suicide and other mental health emergencies have increased. An emergency room nurse notified me that the emergency room at her hospital is not flooded with Coronavirus patients. The emergency room is being inundated with mentally ill, including five patients on suicide watch with only three Coronavirus patients admitted to the hospital!

What Should the Public Health Response Be as the State Opens Up?

- Continue to make sure we can handle a potential surge in patients even though we very well may not have a surge. The experts have been extremely wrong on the numbers thus far and they should not be taken as fact for the future. That being said, it only makes sense to consider that we could have a surge in cases. **We are prepared for that** since we grossly overestimated the number of hospital beds and ventilators we would need for the initial virus hitting the state. Keeping hospitals and offices equipped with appropriate material and drugs to treat the disease is now here and should remain so.
- Continue to watch the local number of cases and let individuals decide what they want to do. We never had an epidemic in most areas of Michigan and hopefully we will not. This should guide us as to how comfortable we can be with large group activities, eating out, etc. We should be able to open up our restaurants now, based on the low amount of cases we have had in almost all areas of the state.
- High risk individuals should be educated on signs and symptoms of COVID-19 and get help immediately if they get sick. Healthcare providers should have a low threshold on starting medications that have shown promise in treating the disease.
- We should look past the concept of not having a treatment and realize that when used early, we now have medications that can treat and potentially cure the disease in individual patients.

Although easier said than done, we need to move past fear, anxiety, and despair with regard to this virus. It's totally understandable that many people are afraid. Nonetheless, the virus is not going to go away simply because we may believe we have hidden from it or avoided it. Like other Coronaviruses, it can be expected to be around. We can treat it. Fortunately, we have learned a whole lot about it and from this we can move forward and get our state and country back to work.

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